

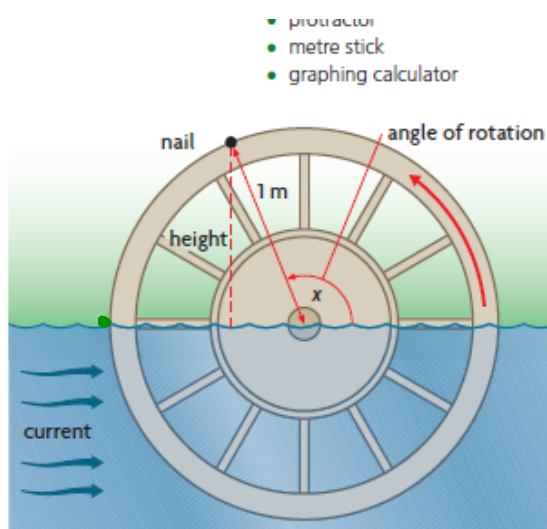
The Sine Function 6.3 and 6.4 p. 335-339 & p. 344-348

INVESTIGATE the Math

Steve uses a generator powered by a water wheel to produce his own electricity.

- Half the water wheel is below the surface of the river.
- The wheel has a radius of 1 m.
- The wheel has a nail on its circumference.

As the current flows, the wheel rotates in a counterclockwise direction to power the generator. The height of the nail, relative to the water level, as the wheel rotates is graphed in terms of the angle of rotation, x .



Maximum -
Minimum -
Eqn of Axis of Symmetry -
Period -
Amplitude -

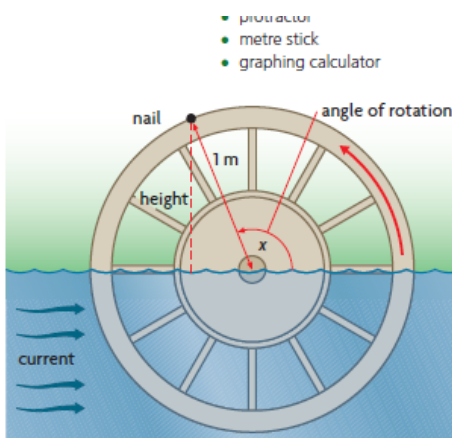
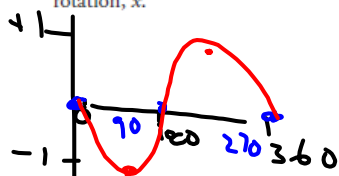
Nov 16-7:42 AM

INVESTIGATE the Math

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Maximum - 1 m
Minimum - -1 m
Eqn of Axis of Symmetry -
Period - 360°
Amplitude - 1 m

$$y = 0$$

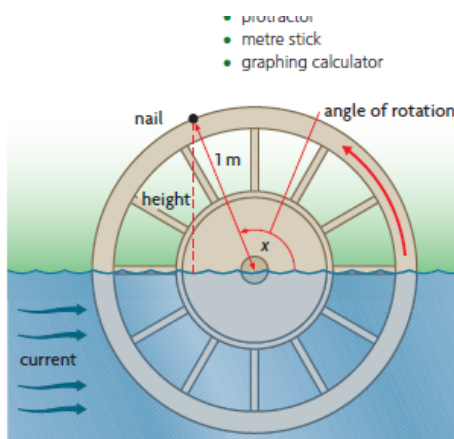
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Maximum -

1 m

Minimum -

-2 m

Eqn of Axis of Symmetry -

$y = 0$

Period -

360°

Amplitude -

1 m

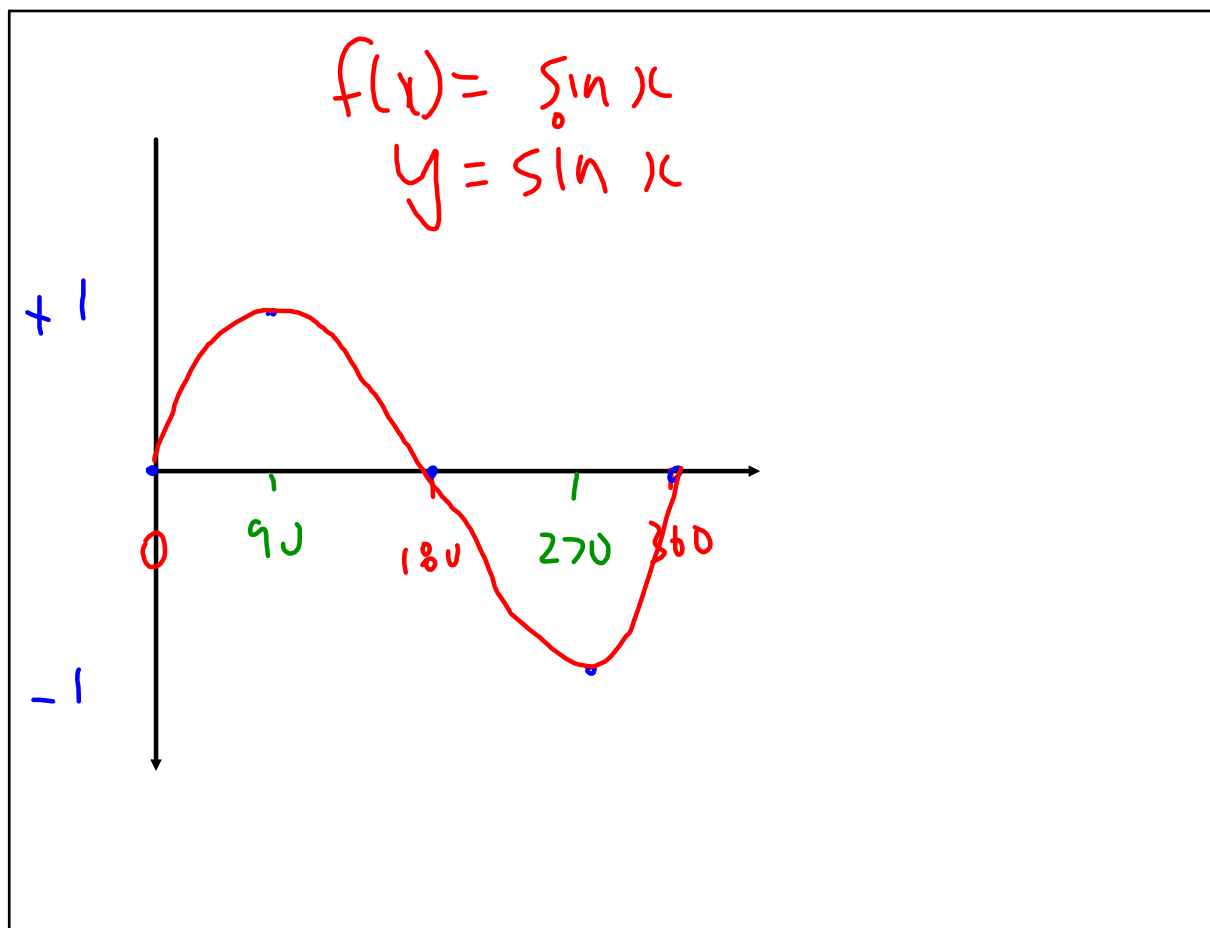
Nov 16-7:42 AM

$$f(x) = \sin x$$

5 Key Points
of Sine Function

- $y = \sin x$
- $(0, 0)$ - eqn of the axis of symmetry
 - $(90, +1)$ - maximum
 - $(180, 0)$ - eqn of the axis
 - $(270, -1)$ - minimum
 - $(360, 0)$ - eqn of the axis

Apr 27-10:11 AM



Nov 17-11:04 AM

Ex. 1 Sketch the sinusoidal graph with the following properties;

period = 20s amplitude 4

eqn of axis $y=2$ 2 cycles

- start pt
eqn of axis
- clockwise

Maximum - $(2+4)$ 6m

Minimum - $(2-4)$ -2

Eqn of Axis of Symmetry - $2m$

Period - 20s

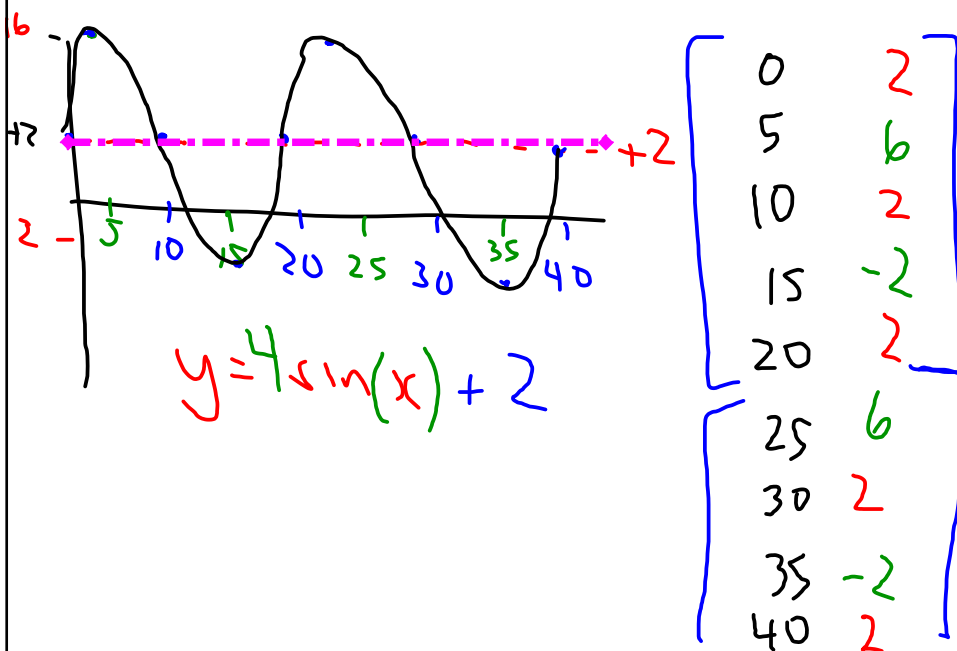
Amplitude - 4

Nov 16-7:47 AM

Ex. Sketch the sinusoidal graph with the following properties;

period = 20 amplitude 4

eqn of axis $y=2$ 2 cycles



Apr 27-10:40 AM

Create Eqn of Sin Function

p. 340

q. 2 Max = 4, Min = 0.5

Amplitude = $\text{Max} - \text{Min} / 2$

$$4 - 0.5 / 2 = 1.75$$

Eqn of Axis = $\text{Max} + \text{Min} / 2$

$$4 + 0.5 / 2 = 2.25$$

$$y = 2.25$$

Therefore

$$y = \sin(x)$$

$$y = a \sin(x) + d$$

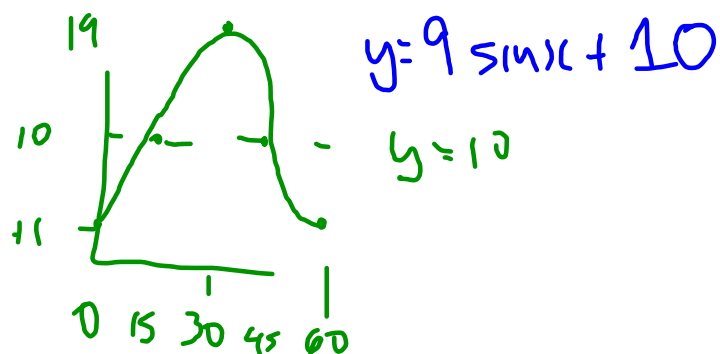
$$y = 1.75 \sin(x) + 2.25$$

Nov 23-10:01 AM

Hmk.

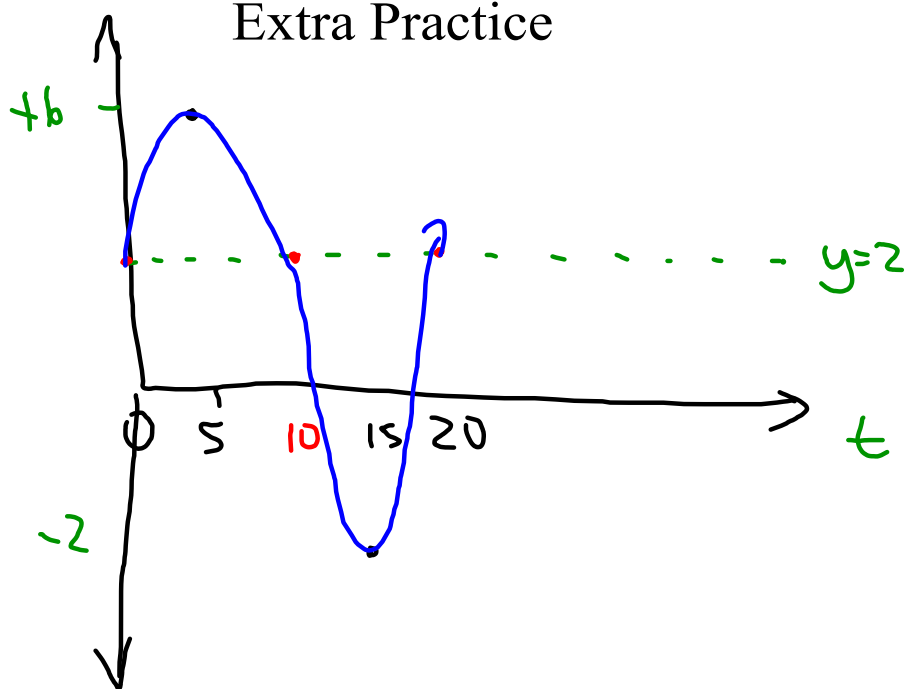
p. 339- 343 q. 1-3,6,8-10

p. 348- 352 q. 2, 4-12 graphing calculator

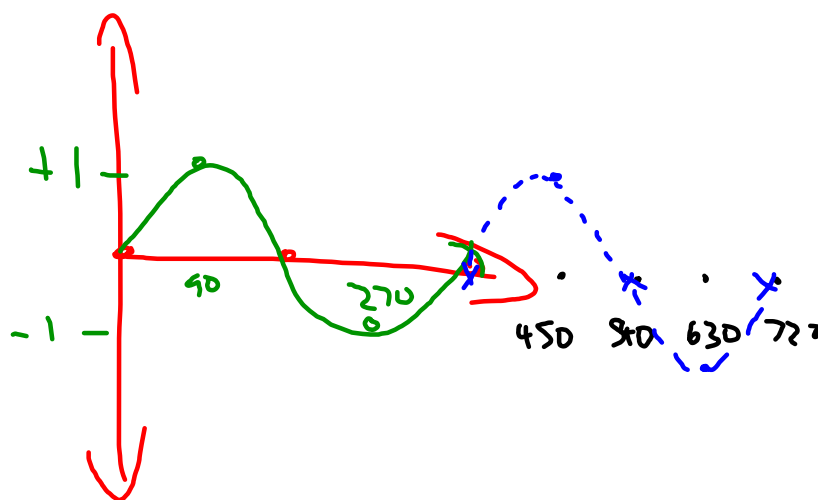


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Extra Practice



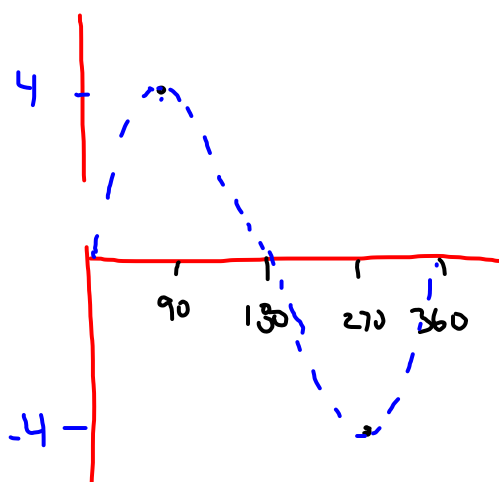
Apr 19-8:41 AM



Apr 21-10:32 AM

$$y = 4 \sin x$$

0	0
90	+4
180	0
270	-4
360	0



Nov 18-2:50 PM